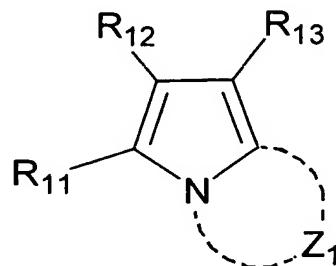


What is claimed is:

1. A thin film transistor comprising at least three terminals consisting of a gate electrode, a source electrode and a drain electrode; an insulating layer and an organic semiconductor layer on a substrate, which controls its electric current flowing between the source and the drain by applying a electric voltage across the gate electrode, wherein the organic semiconductor layer comprises a heterocyclic compound containing a nitrogen atom formed by condensation between five member rings each having a nitrogen atom at their condensation sites or between a five-member ring and a six-member ring each having a nitrogen atom at their condensation sites.
2. The organic thin film transistor according to Claim 1, wherein said heterocyclic compound containing a nitrogen atom is a compound expressed by a following general formula (I):

( I )



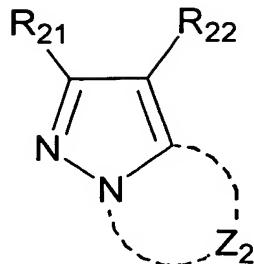
wherein R<sub>11</sub>, R<sub>12</sub> and R<sub>13</sub> each independently represents a hydrogen atom or a substituent; and

20 Z<sub>1</sub> represents an atomic group forming a five-member ring or a six-member ring.

3. The organic thin film transistor according to Claim 1, wherein said

heterocyclic compound containing a nitrogen atom is a compound expressed by a following general formula (II):

(II)

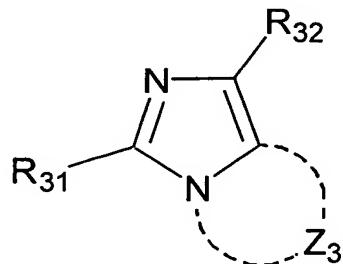


5 wherein R<sub>21</sub> and R<sub>22</sub> each independently represents a hydrogen atom or a substituent; and

Z<sub>2</sub> represents an atomic group forming a five-member ring or a six-member ring.

4. The organic thin film transistor according to Claim 1, wherein said  
10 heterocyclic compound containing a nitrogen atom is a compound expressed by a following general formula (III):

(III)

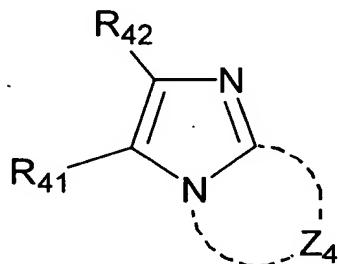


15 wherein R<sub>31</sub> and R<sub>32</sub> each independently represents a hydrogen atom or a substituent; and

Z<sub>3</sub> represents an atomic group forming a five-member ring or a six-member ring.

5. The organic thin film transistor according to Claim 1, wherein said heterocyclic compound containing a nitrogen atom is a compound expressed by a following general formula (IV):

(IV)



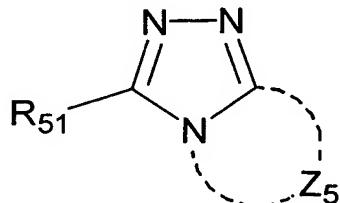
wherein R<sub>41</sub> and R<sub>42</sub> each independently represents a hydrogen atom or a substituent; and

Z<sub>4</sub> represents an atomic group forming a 5-member ring or a 6-member ring.

10

6. The organic thin film transistor according to Claim 1, wherein said heterocyclic compound containing a nitrogen atom is a compound expressed by a following general formula (V):

(V)



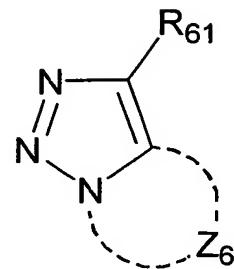
wherein R<sub>51</sub> represents a hydrogen atom or a substituent; and

Z<sub>5</sub> represents an atomic group forming a five-member ring or a six-member ring.

20 7. The organic thin film transistor according to Claim 1, wherein said

heterocyclic compound containing a nitrogen atom is a compound expressed by a following general formula (VI):

(VI)



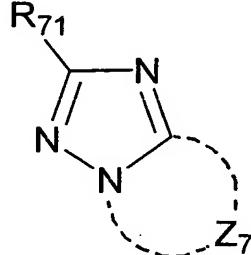
5

wherein R<sub>61</sub> represents a hydrogen atom or a substituent; and

Z<sub>6</sub> represents an atomic group forming a five-member ring or a six-member ring.

8. The organic thin film transistor according to Claim 1, wherein said  
10 heterocyclic compound containing a nitrogen atom is a compound expressed by a  
following general formula (VII):

(VII)



15 wherein R<sub>71</sub> represents a hydrogen atom or a substituent; and

Z<sub>7</sub> represents a group forming a five-member ring or a six-member ring.